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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,094	04/14/2004	Raymond H. Thomas	H0004811-4520	6156

128 7590 02/24/2006

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EXAMINER

CARRILLO, BIBI SHARIDAN

ART UNIT PAPER NUMBER

1746

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/824,094

Applicant(s)

THOMAS ET AL.

Examiner

Sharidan Carrillo

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 26-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 26-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-14, 16-19, and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidman et al. (6162304) in view of Van Steenburgh Jr. (5195333) and further in view of Zugibe et al. (6357240).

In reference to claims 1 and 12, Weidman teaches cleaning air-conditioning components by purging with HFC. Weidman teaches cleaning systems by purging with HFC, which have also used as refrigerants. Weidman fails to teach recovery or recycle of refrigerants. Van Steenburgh, Jr. teaches a process for recovery and recycle of refrigerants for purposes of reuse. In col. 5, lines 1-55, Van Steenburgh Jr teaches evaporation, compression and condensation for purifying the refrigerant for reuse. It would have been obvious and well within the level of the skilled artisan to purify the refrigerant, as taught by Van Steenburgh, Jr. for purposes of reusing and reclaiming the refrigerant.

Weidman in view of Van Steenburgh Jr. teach the invention substantially as claimed with the exception of repeated cleaning steps. Zugibe teaches a method of flushing contaminants from a contaminated refrigeration system by flushing continuously with a continuous stream of refrigerant (col. 5, lines 30-35). Col. 6, lines 39-40 teach recirculating the refrigerant stream. Zugibe teaches terminating the flush cycle when impurities in the refrigerant are below a predetermined threshold level. It would have been obvious and well within the level of the skilled artisan to modify the method of Weidman to include recirculation of the refrigerant continuously, as taught by Zugibe, in order to effectively remove contaminants from the refrigeration system.

In reference to claims 2-4 and 18, the boiling point is a chemical property of the

composition. Since Weidman teaches the same composition as the instantly claimed invention, one would reasonably expect the composition of Weidman to possess similar boiling point ranges.

In reference to claim 5, refer to col. 3, lines 50-60 of Weidman. In reference to claim 6, refer to col. 6, lines 20-25 and Fig. 1 of Van Steenburgh. In reference to claim 7, the limitations are met by Van Steenburgh. Additionally, Weidman teaches cleaning the components, followed by the removal of the cleaning composition. It would have been well within the level of the skilled artisan to clean the component, followed by the removal and purification of the cleaning solvent prior to reuse in order to reduce the level of contamination and further prevent recontamination of the cleaned component. In reference to claims 8-9, the limitations are met by Van Steenburgh. Additionally, Van Steenburgh teaches an oil separator to remove contaminants. In reference to claims 10-11, and 26-27, refer to col. 3, lines 50-60 of Weidman. In reference to claims 12-13, refer to col. 5, lines 1-60 of Van Steenburgh. In reference to claim 14, Van Steenburgh teaches pressure from the compressor for withdrawal of refrigerant. In reference to claim 16, refer to col. 3, lines 50-58 of Weidman. In reference to claim 17, refer to col. 4, lines 3-23, and 65-68 of Van Steenburgh. In reference to claim 19, refer to col. 2, lines 15-20 of Weidman. In reference to claims 28-29, Van Steenburgh teaches an oil separator to remove oil contaminants from the refrigerant. In reference to claims 30-31, refer to the teachings of Zugibe and Van Steenburgh.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weidman et al. (6162304) in view of Van Steenburgh Jr. (5195333) and Zugibe et al.

(6357240), as applied to claims 1-14, 16-19, and 26-31 as described in paragraph 4 above, and further in view of Spauschus et al. (5887441).

Weidman et al. in view of Van Steenburgh fails teach directing solvent through the expansion valve and evaporator. Van Steenburgh teaches directing solvent from the expansion valve to an evaporator for purposes of vaporizing the liquid into a gaseous phase. It would have been obvious to a person of ordinary skill in the art to have modified the method of Weidman to include an expansion valve, as taught by Spauschus, for purposes of vaporizing the liquid into a gaseous phase. Additionally, expansion valves are conventional parts used in the refrigeration system.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weidman et al. (6162304) in view of Van Steenburgh Jr. (5195333) and Zugibe et al. (6357240), as applied to claims 1-14, 16-19 and 26-31, as described in paragraph 4 above, and further in view of Merchant et al. (5759986).

Weidman and Van Steenburgh fail to teach dichloroethylene. Merchant et al. teach trans-1,2, dichloroethylene and HFC compounds as cleaning agents and refrigerants. It would have been obvious to a person of ordinary skill in the art to modify the method of Weidman to include equivalent refrigerants, as taught by Merchant et al., for use as cleaning agents.

Response to Arguments

7. Applicant argues that Weidman fails to teach a continuous flushing cycle where the solvent is cleaned and reused. The secondary reference of Zugibe is relied upon to cure this deficiency.

8. Applicant argues that Van Steenburgh fails to teach flushing a solvent through the refrigeration system and/or reusing the solvent in a continuous manner. The secondary reference of Van Steenburgh is relied upon to teach reclaiming and reusing refrigerant. The prior art of Zugible is relied upon to teach continuous circulation of a refrigerant to flush contaminants from a refrigeration system.

9. Applicant argues that there is no motivation to combine the teachings of Weidman with Van Steenburgh. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both references are directed to the use of refrigerants for flushing a contaminated refrigeration system.

Applicant argues that the combination of the references would destroy the principle operation of the Van Steenburgh reference since Van Steenburgh does not teach repeatedly flushing the contaminants in a continuous process. Applicant's arguments are unpersuasive. Van Steenburgh is relied upon to teach recycling of the refrigerant solvent for reuse. Wiedman teaches flushing components with refrigerant. Zugibe teaches flushing components with refrigerant in a continuous process until the level of impurities are reduced. Zugibe also teaches purification of refrigerants. It would

have been obvious and well within the level of the skilled artisan to modify the method of Weidman to include recycling the refrigerant, as taught by Van Steenburgh, for purposes of reuse. Additionally, one of ordinary skill would have recognized the economical advantages of doing so. The examiner is not relying on Van Steenburgh to teach a continuous process of flushing with refrigerant, the reference is relied upon to teach recycling of the solvent.

10. Applicant argues that Van Steenburgh is a different method intended to solvent and different problem, and therefore, there is no motivation to combine the references. Applicant's arguments are not persuasive since both references are directed to refrigerants used in a refrigeration system.

11. In reference to claim 28, Van Steenburgh teaches an oil separator. It is well within the level of the skilled artisan to purify the refrigerant after each use in order to remove the contaminants present therein. In reference to claim 30, refer to Zugibe which teaches purifying refrigerant flush as it circulates.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharidan Carrillo whose telephone number is 571-272-1297. The examiner can normally be reached on Monday-Friday, 6:00a.m-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sharidan Carrillo
Primary Examiner
Art Unit 1746

bsc

A handwritten signature in black ink, appearing to read 'Sharidan Carrillo', written in a cursive style.

**SHARIDAN CARRILLO
PRIMARY EXAMINER**